

Quadratics Review - Tools

Day 3

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q. 1,2,9-12, 14 & 16

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q. 2,3,6,7,9-11, 13 & 16

Jan 13-7:45 AM

Important Information	Factored Form $y = a(x-r)(x-s)$	Standard Form $y = ax^2 + bx + c$	Vertex Form $y = a(x-h)^2 + k$
Zeros X-intercepts Roots "Solve the equation." 0=...	$x = r$ $x = s$ Set each factor = 0 and solve.	Quadratic Formula: $x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$	Reverse BEDMAS: set equation = 0, bring k value over to the other side, divide both sides by "a", take the \pm square root of both sides and simplify.
Direction of Opening	$a > 0$ opens UP $a < 0$ opens DOWN	$a > 0$ opens UP $a < 0$ opens DOWN	$a > 0$ opens UP $a < 0$ opens DOWN
Is the "y" value of the vertex a maximum or minimum?	Opens up \rightarrow MIN Opens down \rightarrow MAX	Opens up \rightarrow MIN Opens down \rightarrow MAX	Opens up \rightarrow MIN Opens down \rightarrow MAX
Axis of Symmetry X-coordinate of vertex	Add the two zeros and dividing by 2 (always written $x = \dots$)	Complete the Square	$x = h$ Opposite sign to what's in brackets.
Optimal Value Y-coordinate of vertex	Sub "x" from above into equation and solve for "y".	Complete the Square or Sub "x" from above into equation and solve for "y".	"k" value Same sign as outside brackets.
Vertex	Above two steps to get coordinates of vertex.	Complete the Square or Above two steps to get coordinates of vertex.	(h, k)
Y-Intercept	Set $x = 0$ and solve for y.	"c" value is the y-intercept	Set $x = 0$ and solve for y.

Jan 13-7:51 AM

1) Find the zeros s & r

- factor
- read off the graph

2) Vertex

- read off graph
- $x_v = \frac{s+r}{2}$ (h, k)
- complete the square (vertex form)

3) Roots

- sub into standard form
- FACTOR

Jan 13-7:57 AM